

MARINE REVIEW.

VOL. IV.

CLEVELAND, OHIO, THURSDAY, SEPTEMBER 17, 1891.

No. 12.

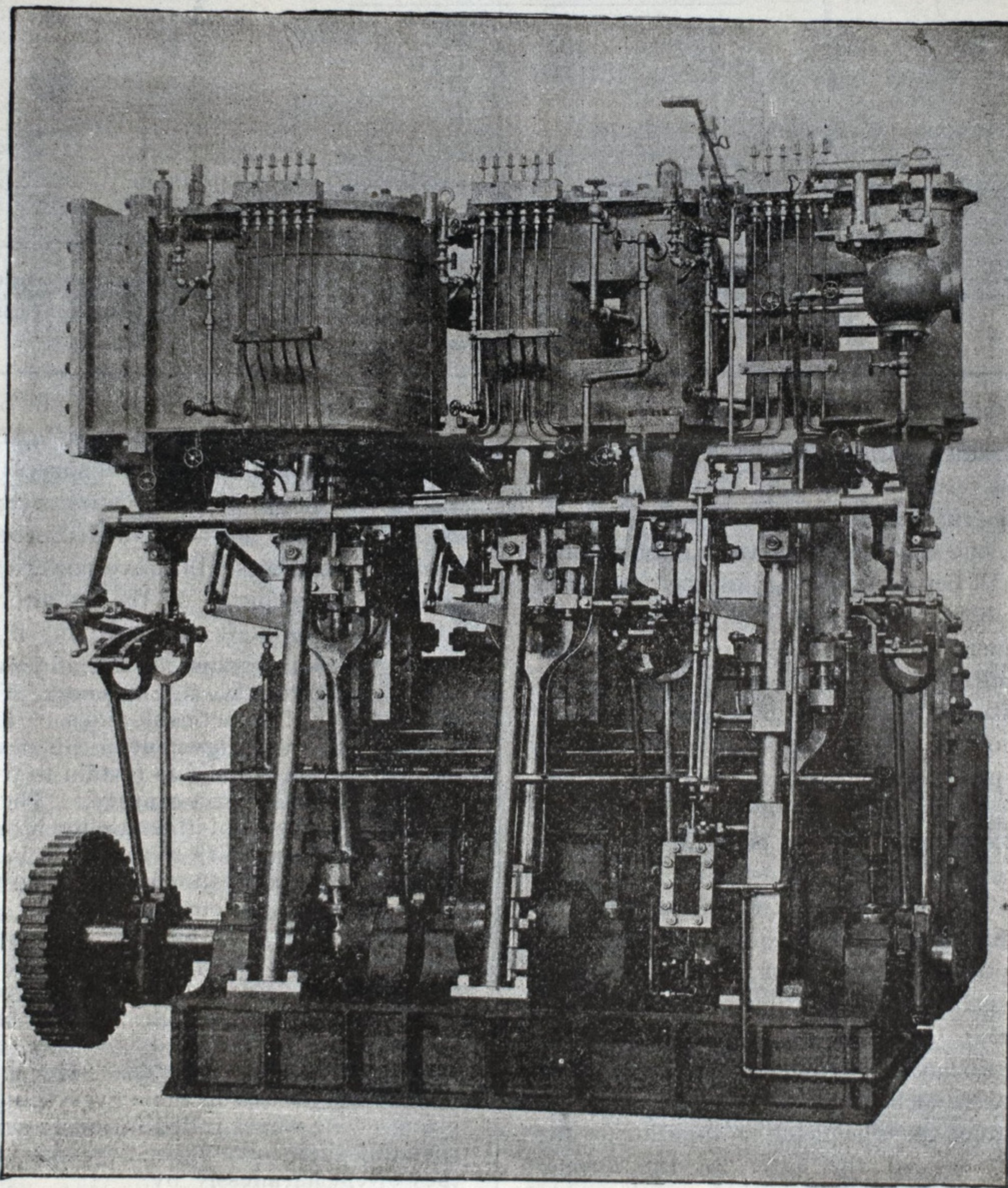
Engines for an Auxiliary Steam Yacht.

Engines for an auxiliary steam yacht, the Wild Duck, owned by Hon. John M. Forbes and described in the American Shipbuilder of New York, are shown in the accompanying engraving. The boat is two masted, schooner rig, 125 feet on the water line 148 feet 6 inches over all, 23 feet 6 inches molded beam 12 feet 6 inches from upper side of deck beam to top of keel and 7 feet 6 inches draft. She was designed by the late Edward Burgess. The engines were designed by James T. Boyd, of the

gether with the center-board, worked, from the top of the house. A short trip of about four hours duration was made recently under steam only, when a speed of 10 3-10 knots was made without any forcing. Revolutions of engine 208 per minute. Steam pressure at engine 180 pounds per square inch.

Bids on the Calumet.

Following are the bids opened at the treasury department, Washington, for the construction of the Calumet, the boat to be



TRIPLE EXPANSION YACHT ENGINES.

Atlantic Works, and are of the triple expansion type, 10 inches high pressure, 14 1/4 intermediate pressure and 26 1/2 low pressure, with 18 inches stroke of piston. The condenser forms part of the framing of the engine and contains 600 square feet of cooling surface; air and circulating pump 8 inches steam, 10 inches air and 10 inches water. The boilers are of the Belleville type, seven elements each, with separator and automatic pump. The propeller wheel is of the Bevis patent. The vessel is fitted with a steel center-board, 21 feet long 6 feet 7 3/4 inches wide, hung with the Burgess hook. The smoke stack is telescopic and to-

used for boarding purposes at Chicago: Union Dry Dock Company, Buffalo, \$36,675; Craig & Co., Toledo, \$39,000; Reeder & Co., Baltimore, \$38,500 for steel, \$37,500 for iron; Manistee Iron Works, Manistee, Mich., \$50,950. The three firms located at lake ports will construct the cutter of steel or iron for the sum named in their bids. The appropriation for constructing the cutter, however is but \$28,000, or more than \$8,000 less than the lowest bid. It is expected the department will be compelled to modify its plans or ask Congress for more money for the work. Meanwhile the bids will be taken under consideration.

Indicator Cards, Series No. 1.

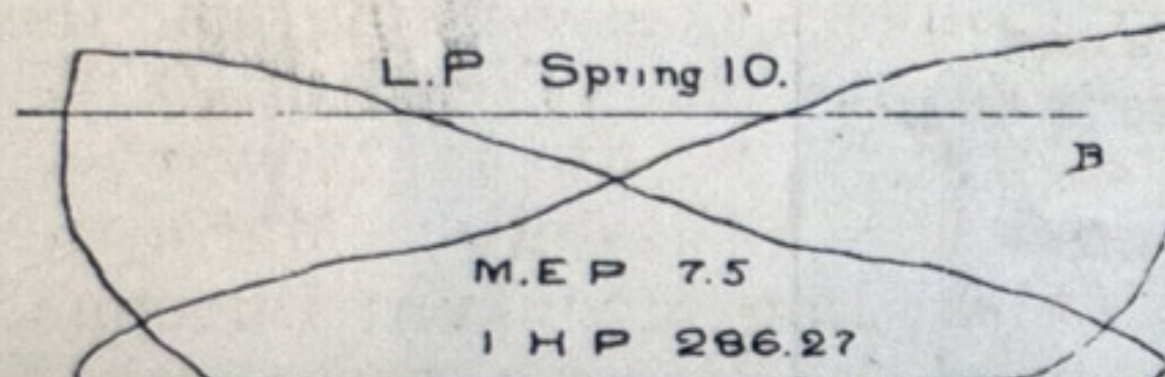
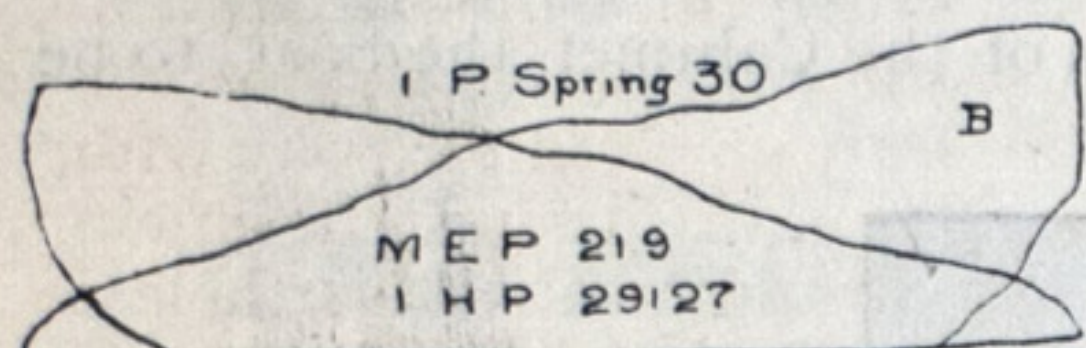
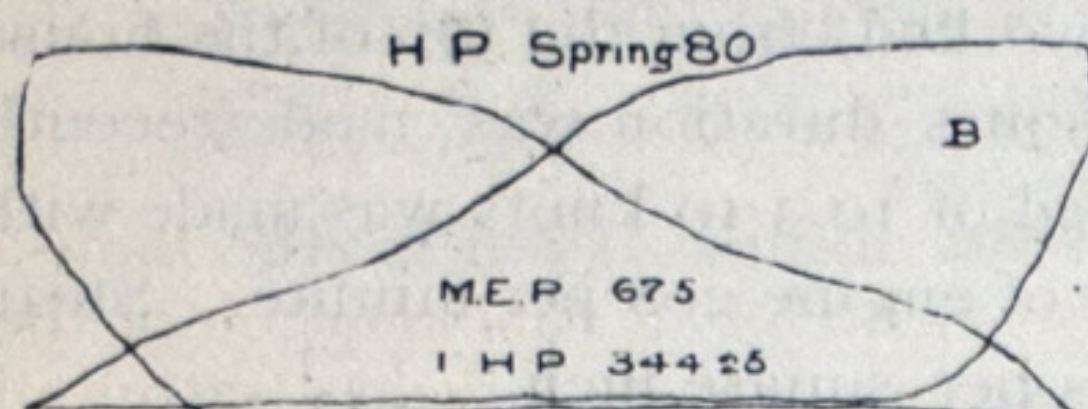
(From Engines built by the Frontier Iron Works.)

—S.S. "W.F. SAUBER"—

—LAKE ERIE, AUG. 21ST 1891—

SHIP LOADED WEATHER FINE

Steam	159 lbs
Vac.	23.5"
Rev.	77.5

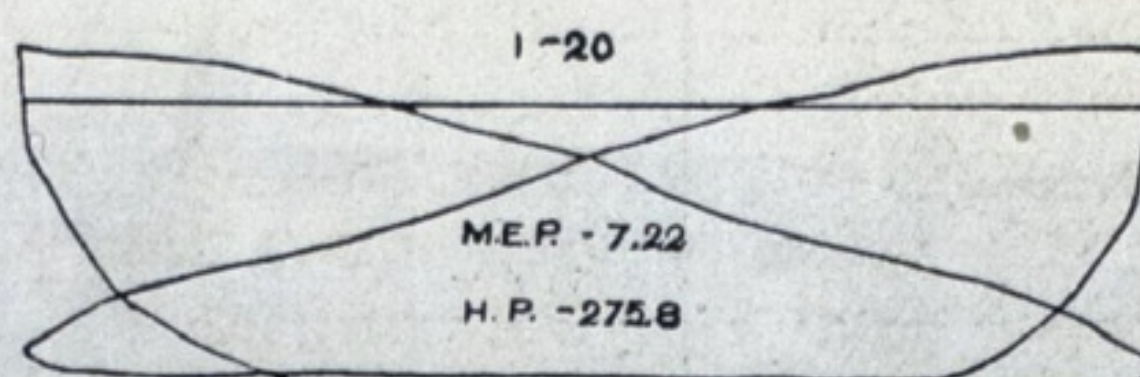
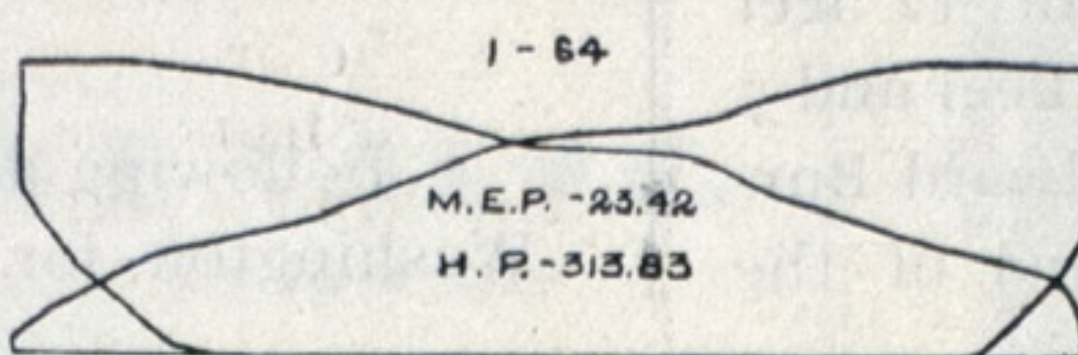
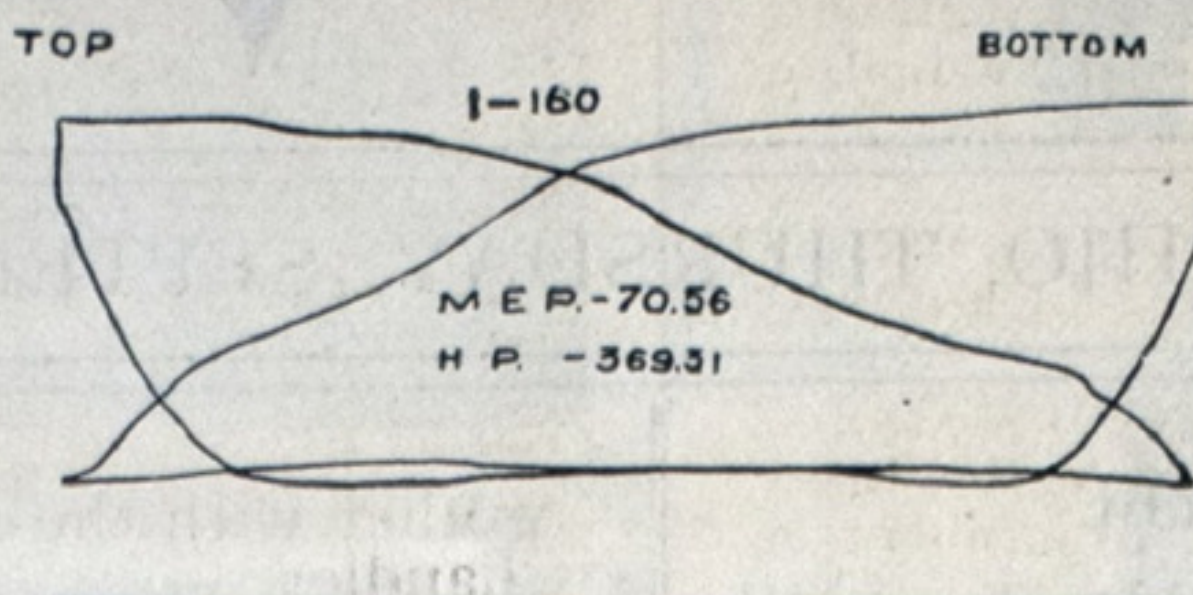


—ENG. 20" 32" & 54" x 42"—

TRIPLE EXPANSION ENGINE, 20" 32" & 54" x 42"

STEAMER MAJESTIC

STEAM	153
VACUUM	23.5
REVOLUTIONS	78



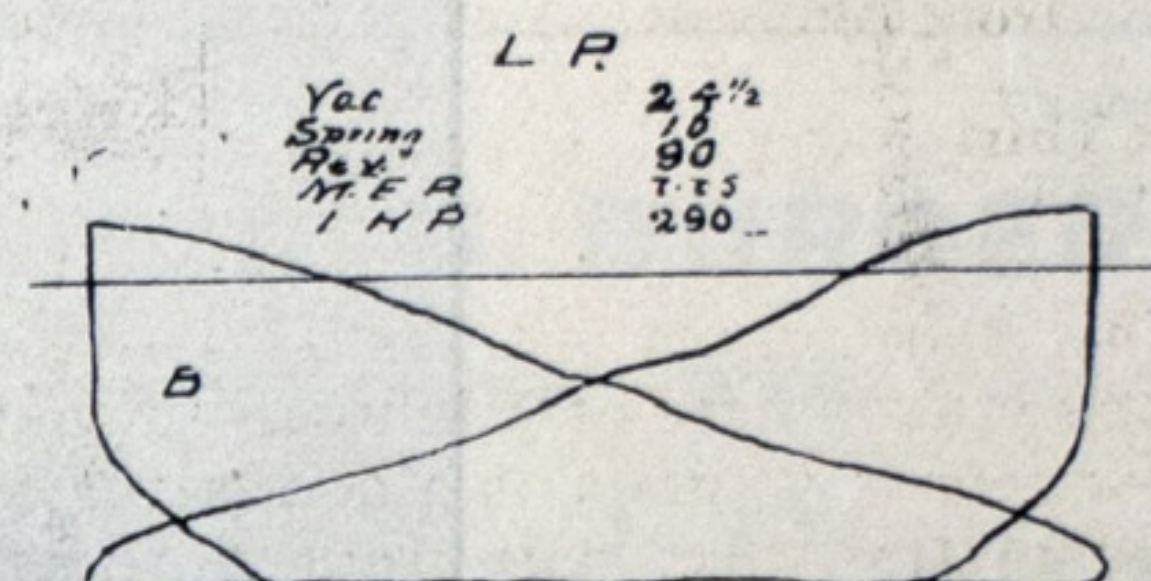
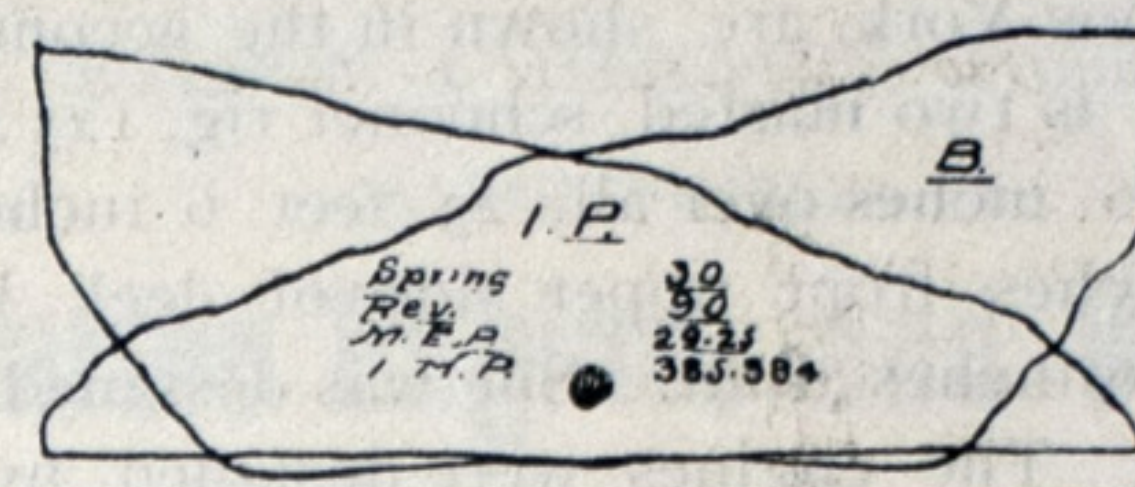
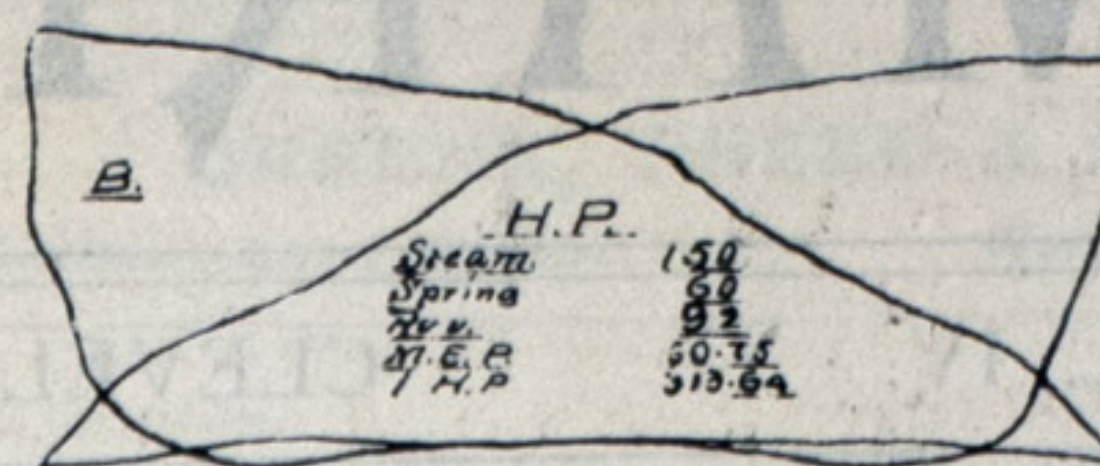
COAL CONSUMPTION, 1.56 LBS. PER H.P. PER HOUR.

CUT-OFF .95"

TOTAL HORSE POWER-958.94

STR. F & P M. No. 5

TRIPLE ENG 19 30" & 52" x 40"



The Sauber's engines have piston valves throughout, and Joy valve gear on the h. p. cylinder. Cards from F. & P. M. No. 5 engines were taken in mid-winter.

Still Discussing the Whalebacks.

Leading technical journals of England are still discussing the whaleback vessels, as a result of the trip of the Wetmore across the Atlantic, and the criticism in some cases is very severe. The Engineer of London, one of the leading trade publications, describes the Wetmore in all her parts, giving also the comments of naval architects on the boat, and then says editorially:

"Our transatlantic kinsmen are just at present occupied upon the modest and promising task of teaching their grandparents the way to make barges. Great Britain which believes herself to be the mistress of the seas, and is so far entitled to do so as is warranted by the possession of the most powerful navy, and eleven and a half out of the twenty-two millions constituting the world's total mercantile tonnage, is now being instructed by a citizen of the United States in the art of designing and building steamers for the ocean-carrying trade. Of course, there is nothing preposterous in this fact, and it is quite possible that our shipbuilders and shipowners have hitherto been working upon upon a wrong principal, but, to put it in the mildest way, we don't think it very likely. At all events it is desirable to be fully informed in what particulars the ordinary ship-shape type of steamer is inferior to the whaleback, and to assure ourselves that under every circumstance the whaleback is superior to the ship-shape type before we discard the latter for the former. Many queer craft have succeeded in crossing the Atlantic, ranging from a 14-foot dory to the Miantonomah, but we could as soon expect the last named vessel to be the model for future war fleets as for the Charles W. Wetmore to be the pattern for coming Atlantic liners."

This last comment brings out a well written article of defense for the barges from the Army and Navy Journal of New York. "Our nervous contemporary may quiet its fears concerning the dangers of the whaleback steamers," says the Journal, "and accept our confident assurance that they are destined to teach commercial England a lesson that will not soon be forgotten. They are destined in the end to convince the last skeptic

of the soundness of the principles of ocean navigation that John Ericsson discovered half a century ago, and for which he—with all his energy and his splendid success during our civil war—was able to obtain but temporary acceptance. Capital and commercial interests are now enlisted in behalf of his ideas, and professional prejudices will prove powerless in the face of the new arguments in support of the monitor system thus furnished. Abundant capital is invested in this whaleback enterprise. Among those interested are the all powerful Rockefellers, Henry Villard and others we might name. They will not waste their money on an impracticable idea. Thus far they have found nothing but encouragement in this new application of the principle Ericsson declared was certain to triumph, though its triumph might be delayed for a century. The C. W. Wetmore, repeating the experience of the monitor Monadnock, is to make a voyage around Cape Horn to the north Pacific coast, and has already started on her way, after having been thrown open for a few days to the inspection of curious visitors. To satisfy its doubts as to the seaworthiness of this type of vessel, the Engineer should recall what John Rodgers of our navy said just after he had weathered a gale with the monitor Weehawken, when "the sea was about thirty feet high." The behavior of the vessel on this occasion he described as "easy, buoyant and indicative of thorough safety." He adds: "Her movements filled me with admiration. I saw in them everything to admire, nothing to improve. The waves rolled furiously across the deck. Instead of spending their force against the side, as in an ordinary vessel, they swept harmlessly by."

The article then goes on to say that the idea that low free-board vessels are not sea-worthy originates in accidents not involved in the design itself; that the monitors were lost through causes other than any fault in their design and that a low turtle back which allows the disturbed seas to pass over, permits higher speed and is taken advantage of in the modern ocean tramp, rendering safe an otherwise very unseaworthy vessel. "The whalebacks mark a change in the conditions of the ocean carrying trade which will in our deliberate judgment be revolutionary," the Journal says in conclusion. "That those whose interests are against them are skeptical proves nothing. Now that mercantile vessels illustrating the idea of Ericsson are actually afloat, it is beyond the power of those who oppose them to mislead the world as to the facts, as it has been misled in the case of the Monitor."

Record of Speed and Big Cargoes.

[Masters or owners are invited to report improvement on this list.]

Iron ore: Lake Michigan—Maryland, Inter-Ocean Transportation Company, of Milwaukee, 3,322 gross, or 3,737 net tons, Escanaba to South Chicago, draft 16 feet 6 inches; E. C. Pope, Dry Dock Navigation Company of Detroit, 3,221 gross, or 3,608 net tons, Escanaba to Ashtabula, draft about 16 feet. Lake Superior—E. C. Pope, Dry Dock Navigation Company, of Detroit, 2,828 gross, or 3,167 net tons, Ashland to Lake Erie, draft 14 feet 6 inches.

Grain: Western Reserve, Peter Minch, of Cleveland, 117,540 bushels of corn, Chicago to Buffalo; W. H. Gilcher, J. C. Gilchrist, of Cleveland, 114,982 bushels of corn, Chicago to Buffalo.

Speed: Owego, Union Line, of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hour; Saranac, Lehigh Valley Line, of Buffalo, Buffalo to Lime-Kilns, 240 miles, 15 hours and 10 minutes, 16 miles an hour.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	\$100 00	\$.....	\$ 80 00
Champion Iron Company.....	25 00	87 50
Chandler Iron Company.....	25 00	37 00	39 00
Chicago and Minnesota Ore Company.....	100 00	100 00
Jackson Iron Company.....	25 00	115 00
Lake Superior Iron Company.....	25 00	51 00	53 00
Minnesota Iron Company.....	100 00	70 00	75 00
Pittsburg Lake Angeline Iron Co.....	25 00	132 50
Republic Iron Company.....	25 00	25 00	27 00
Ashland.....	25 00	53 50
Section Thirty-three.....	25 00	10 00	11 50
Brotherton.....	25 00	2 25	2 75

The 1890 report of Chas. D. Lawton, commissioner of mineral statistics, state of Michigan, which has just been received from Governor Winans, is a document containing a great deal of original matter that will prove interesting to dealers in Lake Superior ores and shareholders in the Michigan mines. Commissioner Lawton says: "There is no better region in the world in which to study mining to advantage than on Lake Superior. Every method of mining, of shaft sinking, drifting, stoping, timbering, hoisting, ore handling, etc., that represents advanced mining, is the method adopted and practised there. This may be said equally well of the iron mines and of the copper mines. In the latter not only is the mining work of the highest order, but the subsequent manipulation of the mineralized rock has been also brought to the greatest degree of perfection. Explosives are a wonderful agent. If the mines were confined to black powder as of yore, no matter how great the development has been in other respects, the prosperity that has been attained could not have been realized. In fact the two forces that in the progress of Lake Superior mining must be allowed to have precedence before all others are the air-drill and giant powder. The rocks of that region are very hard and little effect is produced in trying to penetrate them with hand drills. The giant air compressors, giving 60 pounds pressure on the drills at the rock face down in the mine, is the force now universally employed there to make the opening into which to insert the blast. And thus with the powerful explosive the most enduring rocks and firmest ores are speedily demonished. Holes for blasting are sometimes drilled to a depth of ten or more feet and several sticks of giant powder—half a dozen or more—are inserted and great masses of rock or ore are brought down."

At the office of the Pittsburgh & Lake Angeline Mining Company in Cleveland, the report that the company intends to remove a portion of the water from the small lake adjoining its property is confirmed. For some time past the mining companies owning this small body of water and the mineral lands surrounding it have been discussing the advisability of pumping it out but they have been unable to agree on preparations for immediate work. The Lake Angeline company holds title to only a small portion of the lake, and its land interests being limited, the directors have been anxious to push the work of development under the lake. They have accordingly agreed on plans independent of the other companies, and will this winter construct a dam that will surround that portion of the lake which they control, with the intention of pumping out the water and mining from the top of the deposit, letting the hanging follow the ore as the latter is removed. The work will be done during the coming winter and it is not probable that any difficulty will be encountered, as the water is but about 6 feet deep.

Ore shipments from Ashland on the 9th inst. aggregated only 945,227 tons, against 1,522,679 tons on the corresponding date in 1890, or a decrease of 577,552 tons. The weekly move-

ment has of late been 15,000 to 20,000 tons behind that of a year ago. Shipments of the different mines by way of Ashland to Sept. 9 are as follows: Ashland 180,989 tons, Aurora 59,884, Tilden, No. 2 5,179, Tilden 23,044, Montreal, south vein 42,669, Palms 26,057, Section 33, Bessemer 25,132, Carey 62,866, Trezona 15,759, Germania 20,653, Iron Belt 1,506, Mount Hope 65,072, Norrie 201,007, East Norrie 92,251, Father Hennepin 14,582, Federal 929, Eureka 12,752, Pabst 66,487, Ruby 913, Sunday Lake 42,072, total 945,227 tons. The Ludington mine had shipped from Gladstone up to the same date 94,293 tons and the Hamilton 22,201 tons, while the output from Two Harbors was 363,820 tons for the Minnesota mine and 255,365 tons for the Chandler.

At the King mine, a property located between the Barasa and Negannee properties, a vein, which is a continuation of the one on the Barasa tract, is covered over by a deep stratum of quicksand, and to avoid encountering this a novel method of reaching the ore is being pursued. A shaft about three hundred feet distant from the vein is being sunk on a rocky hill above swamp land, and is now down fifteen feet. When this shaft is down to sufficient depth, a drift will be run under the quick sand to the vein. It is believed that the ore can be reached in this way with less cost than that attached to sinking a shaft through the quicksand overlying the deposit, but the operation is nevertheless difficult and costly by either arrangement.

At the Buckeye mine, Menominee range, a very good showing has been made both in the company's old workings and the new find. The officers of the company are: President, D. W. Ingersoll, Marinette; Vice President, T. F. Rhoda, Milwaukee; Secretary and Treasurer, Col. E. C. Eastman, Marinette; Superintendent, Capt. H. G. Fisk Iron Mountain; Directors, Maj. Ed. Scofield, C. O. Josslyn, Col. E. C. Eastman, R. H. Hackett, Marinette, and T. F. Rhoda, Milwaukee.

The Chapin company will probably ship a little more ore than was expected early in the season. Work on contracts made last spring is about finished but the mining force was recently increased to about 1,100 men and the daily output is about 1,900 tons.

Shipments on a small sale of ore have been commenced at the Pioneer mine, Vermillion range. This mine made a fair showing in shipments last season, but the movement just begun is the first of the present season.

A special meeting of the shareholders of the Riverside Company will be held at Ishpeming, Oct. 6, to arrange for future operations. The mine has shipped about 15,000 tons of ore this season.

The Blue mine, a property adjoining the Queen of the Schlesinger groupe at Negaunee, is being worked under the direction of Capt. Samuel Mitchell, who has broken ground for a shaft.

On Wednesday last the East Jackson mine was closed after being in operation for four years past. The property had been worked by Michigan capitalists.

A contract just awarded to Messrs. William Hamilton & Co. of Glasgow and noted in the English exchanges gives an idea of the extent of orders given by British vessel owners and the class of vessels built even in the fishing trade. The Glasgow builders will lay down the keels at once for twenty steel screws for the Empire Steel Trawling and Fishery Company. Each of the twenty steamers is to be 100 feet long by 21 feet beam, with a depth of 12 feet, and is to be fitted with triple-expansion engines of 300 indicated horse-power.

There are now signal stations on the lakes where the officers in charge give out local weather forecasts. These officers are William B. Stockman of Cleveland, David Cuthbertsen of Buffalo, Dr. H. C. Frankenfield of Chicago, N. B. Conger of Detroit and W. L. Moore of Milwaukee. In the whole country there will be but twenty local forecast officials, all but seven of whom have already been appointed. In the seven appointments to follow Duluth will probably be recognized, so that the lakes will not fare badly in getting six out of twenty leading stations in the country.

Lake Freight Situation.

Some additional sales of ore have been made within the past week at prices covering the increase in lake freight, but the producers have in most cases provided for the delivery of the ore and the new sales have had little effect on freights. In fact, delivery has been made on most of the sales. The Illinois Steel Company has been the largest buyer and it is thought that some of the purchases are of ore that will not be used until next year, but it is purchased now on account of low prices. Freight rates hold to \$1.25 from Ashland, \$1.15 from Marquette and \$1 from Escanaba, notwithstanding the high grain rates.

As a result of advanced lake freights, it is necessary that iron ore be sold at an advance of about 25 to 35 cents a ton over the prices at which the great bulk of the ore was sold last spring, and it is mainly on this account that large quantities of ore will be left in stock piles at some of the Lake Superior mines this fall, the iron interests giving to the lake freight market only such assistance as they are forced to contribute on account of the heavy movement in grain. More of this ore would probably have been shipped to Lake Erie ports if the grain movement had not advanced freights, and furnace owners would have increased their purchases at a slight advance in prices, but they are doing so now only in a small way, as there is little in the iron market to warrant such a proceeding. Ore shippers on the other hand figure that it is better for several reasons to keep their output within the limit of contracts and allow surplus ore to remain at the mines. The shipment of it would be a speculative venture at the best, and there would be involved the additional outlay of money in rail freights to shipping ports, handling charges, insurance, lake freight, cost of carrying it during the winter and worst of all the effect on market prices of the ore. These items of expense are all to be considered even by shippers who may look for high lake freights next spring on account of a prospective shortage in the ore supply and a continuance of the grain movement. Notwithstanding these conclusions on the part of the ore producers, however, there is still every reason to expect improvement in the iron market during the winter. Accumulations of pig iron are not large, although the production of the blast furnaces of the country during September was fully equal to August, and the make during three months since July 1 is 7,200 tons a week more than it was during the corresponding months in 1890 when over-production resulted in a depressed market.

Lumber freights have also advanced and Bay City rates are now quoted at \$1.50 to Cleveland and \$1.75 to Tonawanda, while the rates from Ashland are \$2.75 to Chicago and \$2.50 to Buffalo. There is nothing new to report in coal freights. Shipments of both hard and soft coal are so far advanced that the docks at upper lake ports are still crowded and rates hold to the low figures of the past several weeks. A shortage of soft coal in the Pittsburgh region is also a cause of the light movement.

Planning for a Convention of Lake Interests.

As a result of a letter recently written to the Detroit board of trade by Hon. J. Logan Chipman, member of congress from the Detroit district, the commercial bodies of that city are engaged in an effort to learn whether other associations of the different lake cities especially interested in water transportation think it advisable to hold during the coming fall or winter a convention for the furtherance of channel improvements. Letters of inquiry have been sent to commercial bodies in all parts of the lakes. The intention is to give particular support to the movement for a 21-foot channel in existing waterways, which Gen. Poe estimates will cost \$3,339,567. Congressman Chipman's letter, printed below, explains itself without extended comment:

TO THE DETROIT BOARD OF TRADE: Gentlemen:—I beg leave to call your attention to the necessities of Northwestern Lake Commerce, which seem to me urgent. These consist of—

FIRST. A channel twenty-one feet in depth consecutively from one end of the lakes to the other.

SECOND. Harbor improvements where they will do the most good to the general business of lake transportation; this, of course would include facilities for handling ships, and access to important products.

THIRD. Light houses, fog signals, buoys, ranges, and other aids to navigation.

FOURTH. A sufficient and reliable communication by water between lake ports and foreign countries.

These are matters of vital importance to the entire producing region of the Northwest, and especially to the nine states which debouch on the great lakes, for the question of transportation is to us, the most important question for consideration. The improvements I have suggested demand the expenditure of large sums of money, running into the hundreds of millions of dollars—sums so large that we are admonished that they should only be expended under plans carefully prepared, and for well ascertained necessities. The real necessities of the situation are so great and so imminent, that it is our duty to interfere to prevent appropriations by Congress for works which are not needed now, or which will not be needed in a probable future. In a word, we have in this lake country so many meritorious objects for appropriation of national money, that we should only advocate those which are broadest in their scope and most pressing as a present need.

I do not think it necessary to enter into discussion of the importance of direct communication by water between lake ports and foreign countries. The project is a vast one, but entirely within the legal power and financial ability of the national government. The great lakes and their tributary country must have access to the sea in their own ships. This should be taught to every child of this section as the creed of his civil faith. The yearly cost of handling the exports and imports of this vast region would soon pay for the construction of canals of capacity to float the deepest ship which could use a twenty-one feet depth of water in the lakes. The attainment of that depth for the lake marine would be "a lame and impotent conclusion," if it is not supplemented by ocean navigation. Our lumber, iron, cotton, wheat, pork, beef and the products of our factories, are too vast to be forever tributary to the middlemen of the seaboard. Our producers are entitled to make as nearly all that can be made out of their products, by dealing close to first hands. Beyond this there is no reason why the lake country should not be a second Clyde and construct ships for the world. Every lake city should be a seaport, and all charges for handling our products between shipments here and the entrance on the ocean should be saved.

I have ventured to address this communication to you because I am certain there should be concert of action among the people of this western country and of the Northwest, in all matters relating to transportation. I would thus avoid waste of appropriations for works not greatly needed, and would give authoritative utterance to what is greatly needed. Bodies like yours could easily bring about this concerted action. My own view is that a convention, held at some lake city during the coming fall, would deal not only intelligently, but influentially, with matters I have suggested. The twenty-one feet channel, what harbors ought to be improved, what light houses, etc., ought to be constructed, what methods adopted to secure direct trade with foreign countries, would constitute the field of such a convention.

Next summer the country will be in the throes of a presidential election, and it will be difficult, if not impossible, to secure attention to these subjects. Hoping that you will approve of my suggestions, and act as a body in furtherance of them, I am, with great respect,

Yours truly,

J. LOGAN CHIPMAN

DETROIT, July 14, 1891.

Canada's Share of the Grain Trade.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., Sept. 17.—To give an idea of the quantity of grain that is coming this way it might be stated that during the month of August there were 2,200,000 bushels transhipped here by the two forwarding companies. That is pretty good work not to speak of the large quantity of coal that was carried down the river also. Notwithstanding the rush of grain, the complaints were few, and vessels had little or no delay. To accommodate the traffic the canals will be open on Sunday during the remainder of the season. If the northwest grain crop turns out well and there is every indication that it will, the forwarders here will have the busiest fall in the history of Kingston. The boats will be kept going so late that coal freights to Montreal from Oswego may be affected. This coal is carried in barges and as a rule when there is no grain moving, the dull spell is occupied in taking coal. Considerable rye is now being handled here for Europe.

The dry dock is now completed and this fall will see it in operation.

A new propeller is being erected on Garden island by the Calvin company. Its hull is so near completion that it will be launched this week. Although that place is a very small island every particle of a boat can be built there and the best of workmanship turned out.

While here lately the St. Magnus got some repairs made to her wheel. Her cargo was shifted so as to lift her stern out of water. The result was she received a severe strain. The propeller Celtic on her trip up also broke her wheel, and had to go on the dock at Port Dalhousie.

The water on Point Frederic shoal on which several big steamers have been aground is now 12 feet 6 inches deep.

The harbor at Belleville requires dredging badly. Twice in a week the mail steamers were stranded and delayed, in one instance for nearly a day. Of course if the dredging is not done the steamers may cease calling at that port, which would be a serious matter for the town.

The steamers North King and Bon Voyage have made their last trips from Rochester down the river.

The schooner Grantham is one of the small vessels that is being run for all she is worth. She is now on the dry docks for repairs for the fall trade. She very seldom has a poor season.

The propeller Clinton and barge have left here for Detroit with a million feet of deals, consigned to the Dominion Match Company of Detroit. The timber will be used exclusively for the manufacture of matches.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, Ill., Sept. 17.

Sometime this week a letter to Capt. J. S. Dunham, urging him to become a candidate for drainage commissioner will be given to the press. It is now being circulated by his friends for signatures. Already it is the strongest indorsement ever given a marine man for so important a place. All the elevator companies, the big coal companies, the agents of every lake and rail line, every steamboat company, all marine insurance men, and practically every vessel broker have cheerfully signed the document. The lumber, dry dock, dredging and ship chandlery interests are equally well represented. It is in fact thoroughly representative of Chicago river interests. The place is extremely important to the lake marine. The drainage board has taken control of the Chicago river for the purposes of sewerage, and henceforth will have a voice in all proposed changes. Its membership is small and one member with the experience of Capt. Dunham will have great weight in its proceedings. That marine men, notwithstanding the friction of business relations, have come so generally to Capt. Dunham's support shows they fully appreciate the importance of having a representative on the board at this critical juncture when the future of the Chicago river is at stake. The nomination will be made by the Republican convention Oct. 2 and the election is in November. The letter to Capt. Dunham is as follows:

To James S. Dunham: As the drainage project is by necessity compelled to use Chicago river, and the sewerage question and improvement of navigation in the river are thus to go hand in hand, we believe that good business principles demand the presence on the drainage board of a practical business marine man, one whose long experience and every day study of these two questions of river navigation and the disposal of the city's sewerage will amply fit him to act intelligently when these grave issues come before the board for action. We are firmly convinced that you are well equipped for this task. For years you have devoted much attention to the purification of the water in Chicago river, and it was mainly due to your efforts in co-operation with the city authorities that the wholesale pollution of river water by the gas houses, packing houses and other manufacturing industries has been stopped, to the lasting good of the people of Chicago and of the valley towns. In the time that must elapse before the completion of the drainage canal much can be done in this same direction, and you are, we believe, just the man, who most of all will aid the drainage commissioners in the work of making the river not a disgrace to the city during the World's Fair. For the marine interest you can do great service in the way of river improvement, which the lake marine would willingly entrust to your care, well knowing that a full intelligence and a sturdy common sense would ever be on call for your brother commissioners. It is for these reasons that we urge you to become a candidate for the position of drainage commissioner.

Collector Clark has undertaken to get up a naval display at the unveiling of the Grant monument at Lincoln park, Oct. 7. The United States will be represented by the Michigan, Fessenden, and Andy Johnson. The monument is near the lake shore, and a naval display on the lake would add greatly to the ceremonies, which will be witnessed by 50,000 or more people. Vessel owners cannot afford, of course, to hold their boats in port to add to the naval display, but it seems entirely feasible that captains of incoming or outgoing steamers could stop off Lincoln park for half an hour or an hour during the ceremonies. The steamers could at least run in and pass the park under check. There is plenty of water half a mile from shore. A half dozen steamers in the background of the display would add greatly to its attractiveness. Several local vessel owners are going to considerable expense to assist the collector in having their boats at anchor off the park. If a fleet of twenty or thirty steamers and sail vessels could lie off the park during a part of the ceremonies the effect would be surprising to the spectators, who would imagine the lake was full of boats. The lake marine could well afford to lose an hour's time on a few boats for the effect it would have in showing the masses that there is a big traffic on the lakes, something that most people in Chicago are lamentably ignorant about. By instructions to their captains,

owners can do Chicago and themselves a good turn. Let not the lake interests alone be without patriotism and too greedy to lose an hour in honor to the greatest general of the rebellion.

The other evening I had an extended talk with J. I. Morton, of the Graham & Morton line, on the plans for a new steamer. One is to be built, that is certain. She is more likely to be wood than steel, as she will become the winter boat of the line. Negotiations are in progress with Burger & Burger of Manitowoc. One thing is decided—the new boat must have a power to drive her seventeen miles an hour without crowding. The trade demands that speed.

The bulk of the lumber used in World's Fair construction ought to be taken direct to the ground in boats, but the accommodations for water traffic are so bad that the stuff must be nearly all shipped by rail or teamed from river yards. One firm is now trying to make arrangements to unload lumber vessels in the harbor here on scows, and then tow the scows to the fair grounds. Even that is hard work, on account of low water in the channels from the lake into the grounds.

The long predicted boom in lake freights reached Chicago and Duluth the same day at the same hour. It was Tuesday when the shippers, tired of waiting for boats, bid up the rate to 3½ cents on wheat to Buffalo with the hope that sufficient tonnage would be attracted here to end the annoyance of waiting for boats before trades could be closed up. The advance has come to stay for the rest of the season, and while there may be temporary depression there will be no permanent backset until the ice blocks the straits.

Saginaw Bay Marine.

Special Correspondence to the MARINE REVIEW.

WEST BAY CITY, Mich., Sept. 17.—Both shipyards here show signs of activity. At one yard the blocks are up for the keel of the new wooden steamer, and in the steel yard the four keels for the government light-ships have been laid down. At Davidson's yard the timber for the largest wooden ship on the lakes is being hauled out of the slip.

It is quite refreshing to write from a city where machinery builders are full of work and have not been affected by the dull time in lake marine that has passed. Reference is made to East Saginaw. It is not generally known that there is a shipyard at that place. It is operated by Carlin, Stickney & Cram. During the past year they have built five dredges. No. 15 will be ready to leave the yard in about a month. In addition to this, fifteen scows, most of them of 250 yards capacity have been turned out. They employ from seventy-five to 100 men most of the time. This company's No. 6 made a record for digging at Toledo last week. Over 2,700 yards of bottom was removed on the straight channel in 12 hours.

At the plant of Wickes Brothers eleven boilers are under construction, eight for the government light-ships at Wheeler's, two of 11½ by 12 feet for the wooden boat at the same yard, and one for the dredge No. 15. They also furnish for this dredge two of the largest dippers ever built on the lakes. They weigh seven tons each and have capacity for four yards of earth. The machinery for the dredge is being built by A. F. Bartlett & Co. Wickes Bros. have recently completed three sets of bending rolls, 18 feet long and weighing 70,000 pounds each for the new shipyard of the American Steel Barge Company on Puget sound.

Freight rates have gone up a notch and vessel men are correspondingly jubilant. The rate to Buffalo and Tonawanda is now \$1.75 and to Ohio ports is \$1.50 with an increase of 12½ cents on lumber from Saginaw. It is surprising what an enlivening effect this has on the owners. Already boats that have not been in commission for several weeks are loading, and many others are looked for in this port within a week or ten days. Owners predict that business will be good for the rest of the season, and that another advance will come in a few weeks.

From all Quarters.

The steamer E. C. Pope was 200 bushels short on the wheat cargo of 103,962 bushels which she was to deliver from Duluth. She has gone to Chicago for a big load of grain.

Capt. John Munson, who sailed lake vessels in the sixties and was for several years marine inspector for the Northwestern Insurance Company, died in Oswego a few days ago. He was 84 years of age.

The celebration of the Port Huron-Sarina tunnel opening will not be so elaborate as expected, consisting merely of a banquet to which 300 guests are invited. The total length of the tunnel is 6,050 feet—2,300 feet under the St. Clair river and 1,800 feet and 1,950 on the American and Canadian sides respectively.

The stake placed on the extension of Little's point shoal, near Colchester, by Capt. Geo. P. McKay will probably be cared for by the Canadian government, and Commander Woodward of Buffalo has submitted to the light-house board the proposition that he take charge of the new stakes at Bar point and the red spar opposite Ballard's reef, Detroit river.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

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The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels.....	1,272	328,655.96
Canal boats.....	657	67,574.90
Barges.....	54	13,910.09
Total.....	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886.....	85	20,400.54
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
Total.....	902	393,597.03

Annual tonnage entries and clearances of the great seaports of the world, for 1889: New York, 11,051,236 tons; all seaports in the United States, 26,983,315 tons; Liverpool, 14,175,200 tons; London, 19,245,417 tons.

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to 36,203,606 tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Entered at Cleveland Post Office as Second-class Mail Matter.

PRESIDENT James J. Hill of the Great Northern Railway and the Northern Steamship Company is again worrying some northwestern interests in connection with the grain movement. In accordance with the policy of giving to his lake line as large a portion of the grain as is possible he has forced the "Soo" road into making the rate from certain parts of the grain fields to the head of Lake Superior the same as that to St Paul and Minneapolis. This gives to the lakes, of course, a larger share of the business this fall than might be expected under rates favorable to St Paul and Minneapolis. The people of the Twin Cities are making a big howl about discrimination, but Mr. Hill has put more than a million into ships and he is only carrying out a plan of cheap transportation from the northwest that was announced before the boats were built.

CAPT. J. S. DUNHAM, of Chicago, is urged by his associates in the marine business to become a candidate for drainage commissioner. The drainage commission will have great influence in matters of vital importance to the marine interests of Chicago, and in fact to the entire lake marine, on account of its power in connection with Chicago river matters. That Capt. Dunham is well fitted for the position there is no doubt, and it is to be hoped that Chicago's marine men will recognize not only his capabilities but also the principle involved and the prestige to be gained through a unanimous demand for their rights. Chicago, unlike

other lake cities, has of late years turned to regard its lake business as of minor importance, and a movement of the kind now on foot will go a great way toward overcoming this feeling.

CLEVELAND's city government, which was radically changed both in system and officials a short time ago, promises among other thing an opening into the lake from the channel known as the old river bed. The Lake Shore Railway Company's opposition to the opening of this channel and the relations of the railway company to the city with regard to it, are matters that have been thoroughly discussed within the past few years, and it can be safely said, notwithstanding all talk to the contrary, that the vessel interests of the city favor the improvement. If the new city government proves itself in earnest in this matter, little trouble will be found in showing why certain leading vessel owners, ore and coal shippers cannot show openly their approval of the project although they are heartily in favor of it.

THERE is a growing opinion that the masters of some of the big lake steamers are compelled to spend too much time on deck. It does not come from any complaint on the part of the captains, but owners who know of the men going for thirty-six hours and often for a longer period of time without sleep have themselves given some attention to the matter, and it would not be surprising if an additional pilot is placed aboard some of the big steel boats in the ore trade next season. The rush attending trips of five days from Lake Michigan and six or seven days from Lake Superior, is very trying on the chief officer, who is compelled in most cases to remain on duty during all time in port and while running the rivers.

It is probable that the Sheffield-North Star collision case, in which Justice Brown divided damages when Judge in the United States district court at Detroit, will be the first admiralty case to be heard in the new appellate court taking in the lake states of Michigan and Ohio. The case was to have been argued on appeal before Circuit Judge Jackson at Cincinnati a short time ago but it is now probable that it will come up in the new court which has final jurisdiction in admiralty cases. Justice Brown's connection with the new court and the heavy damages involved in this case combine to make it interesting. President Harrison has not as yet appointed the new appellate court judges.

THE REVIEW has received within the past few weeks a number of letters from congressmen and newspaper correspondents in Washington and other places, inquiring for statistical matter regarding lake commerce, phototypes of steamers, etc. The inquiry is mainly from those who made the trip to Lake Superior during the past two weeks. The newspaper writers are evidently preparing special articles from notes made while on the lakes, and the excursion scheme, although not carried out on as broad a plan as was expected, will result in great assistance toward securing favorable legislation in the next Congress.

HON. MR. BOWELL, Canadian minister of customs, announced in parliament a few days ago the intention of the government to increase the depth of the Canadian canal now under way at Sault Ste. Marie to 19 feet. The increase in cost will be about a million, bringing the total cost of the work to a little more than four millions. This canal should admit of 21 feet navigation, the same as the American canal being constructed at its side. Canada should profit by the lesson taught in the inadequate dimensions of the Welland and St. Lawrence river canals.

In raising a drowned body a French-Canadian proceeded in this way: He supplied himself with some glass gallon jars and a quantity of unslack lime and went in a boat to the place where the man was seen to go down. One of the jars was half filled with lime and then filled with water and tightly corked. It was then dropped overboard, and soon after exploded at the bottom of the river with a loud report. After the third trial, each time at a different place, the body rose to the surface.

Around the Lakes.

Capt. John Ollerich died Friday at his home in Racine, at the age of nearly eighty years. He owned and sailed a number of vessels on Lake Michigan.

Charts when mounted and bound can be handled without danger of being torn. William Howe of No. 568 Ontario street, Cleveland, makes a specialty of this work.

At Detroit a few days ago the government inspectors issued a master's license to a woman, Mrs. Celia Person, who will command the small steamer Florence C. of Alpena.

Five-sixteenths of the propeller Oswegatchie was recently purchased by E. C. Recor, C. A. Chamberlain and Edward Harlock of Detroit, for \$2,275, or at the rate of \$7,289 for the boat.

The schooner Montana, ore laden, which was wrecked on Middle island last fall and abandoned, was released last week by the tug Frank W. and towed to Presque Isle for temporary repairs before being taken to drydock.

The Wolf & Davidson Dry Dock Company has taken a contract to build a tug for Capt. M. Golden, of Menominee, Mich. She is to be a duplicate of the Knight Templar, about 75 feet long, and with about the same power.

Frank Hagan of Green Bay owns a stone quarry on Sturgeon bay opposite the town of that name. It is said that he intends running a channel into the excavation from which the stone has been removed and in that way convert it into a drydock.

The Lehigh Valley steamers are making some good runs from Buffalo to Lake Michigan. The Saranac was just 61 hours running from Buffalo to the Rock Island elevator, two miles up the south branch, Chicago river. The Tuscarora ran from Buffalo to Milwaukee in 54 hours and 7 minutes.

It was announced from Detroit when the schooner F. L. Danforth was there loading for Buffalo, that she had never taken a cargo there before. A few days ago she unloaded here and came out 638 bushels short. It is fair to guess that she will never take another load there.—Buffalo Express.

The Lehigh Coal and Iron Company, owning big docks at Superior, has decided to increase its storage capacity about 150,000 tons. The docks now have a capacity of about 275,000 tons and the company will handle 500,000 tons of coal this year. It is said that dock improvements at Superior during 1891 involve an expenditure of \$700,000.

The steamer Maryland, plying between Escanaba and South Chicago in the ore trade, made the round trip last week in forty-eight and one-half hours. The time up the lakes, light, was made in nineteen and one-half hours and the return in twenty-four hours, only five hours being required for loading 3,200 tons of ore at Escanaba. The distance one way is about 300 miles.

The new steamer on the stocks at the shipyard of Burger & Burger, at Manitowoc, for Capt. Charles Gnewuch and Messrs. Buckley, Nuttall and Wilson of Manistee, will not be completed in season to go into commission before the close of navigation. In general appearance the steamer will resemble the John Schröder, but her beam will be two feet greater than the Schröder's. The engine, a fore-and-aft compound with cylinders 18 and 36 inches in diameter and 36 inches stroke, was built by the Montague, Iron Works. A boiler of 130 pounds working pressure guarantee will furnish the steam. The boat is to be launched about Nov. 15.—Milwaukee Wisconsin.

When the schooner Evaline Bates, which was wrecked recently on Beaver island, Lake Michigan, was a new vessel she spent some time on the Atlantic ocean, in the coasting trade. On one occasion she took a cargo of hides from a Texas port, and encountering a hurricane in the Gulf of Mexico, the hides were saturated with salt water. When Mobile, her point of destination, was reached the vessel was ordered away on account of the stench emanating from the cargo. The hides were afterwards dried at a lonely spot on the shore of Mobile bay. During the war of the rebellion the Bates returned to the Great Lakes, and since that time has earned several fortunes for her owners. The vessel came out in 1858, and is therefore thirty-three years old.

Capt. Thomas Martin, who died at Oswego, N. Y., a short time ago, had been connected with vessel business from boyhood and was well known in all parts of the lakes. His death was sudden. Capt. Martin was sixty years of age. He had been sailing for a number of years previous to the early sixties when he began a vessel brokerage business in Oswego, and had com-

manded the schooners D. L. Couch, Cornwall, Admiral, Monarch and others. He was both master and owner of the Monarch when he quit sailing and had since been interested in the Thomas Martin, Tom Sims, Victoria, Hoboken, Mediator, Nevada, Jamaica, Samana, Falmouth, Lem Elsworth, D. G. Fort and Houghton. At the time of his death his only vessel property consisted of interests in the two last named vessels.

Cleveland Matters.

The lumber barge American Giant and L. W. Drake, which have remained within the Cleveland breakwater enclosure all season, will be sold by the United States marshal at 10 o'clock a. m. Sept. 21.

On account of the accident to Capt. John L. Swartwood of Lorain, by being thrown from his buggy while riding, Capt. Richard Call of Ashtabula, who was in the steamer Quito, has taken the William Chisholm, and the Quito is now commanded by Capt. George Bessant of Madison.

During the first twelve days of September the Ship Owners' Dry Dock Company had docked seventeen big vessels in its two docks. About 3,000,000 gallons of water, the contents of the new dock with the schooner Foster afloat in it was pumped out a few days ago in just forty-five minutes.

Vessel masters and owners who know Capt. De Wolfe, inspector of hulls in the Cleveland district, will pay little attention to the story that he advised the officers of the steamer City of Toledo to seek a race with the Frank E. Kirby. Capt. De Wolfe's disposition in carrying out the rules of the inspection service is too well known to admit of any doubt in a matter of this kind. Still, the masters of the City of Toledo and Kirby can, if they desire, have a race every time they meet, passengers or no passengers providing their steamer is held within the limit prescribed in their certificate of inspection.

Notices to Mariners.

The light-house board gives notice that on or about Sept. 30, a fixed red light of the fourth order will be exhibited from the temporary structure recently erected on the north end of Devil's island, the most northerly of the Apostle group, Lake Superior. The light will illuminate the entire horizon. The focal plane is 87 feet above lake level, and the light may be seen in clear weather about 13 statute miles. It will be shown from a black lantern, surmounting an open frame work skeleton tower, 60 feet high from base to focal plane. The upper part of the tower is inclosed for a watchroom. Distances and true bearings of prominent objects are approximately as follows: Sand island light-house, S. W. by W. $\frac{1}{2}$ W., 11 $\frac{1}{2}$ statute miles, Outer island light-house, E. $\frac{1}{8}$ S., 14 $\frac{1}{2}$ statute miles. During thick or foggy weather a 10-inch steam whistle will be sounded giving blasts of 5 seconds duration, with alternate silent intervals of 10 and 40 seconds. The fog-signal house is located on a point about 500 feet N. W. from the light tower.

In General.

The Sun of Newport News, Va., says that several new steamships are to be built at the big shipyard there, and that 1,000 additional men are to be employed.

An appliance recently fitted to some ocean going vessels shows in the captain's quarters, chart room, or in fact any part of the boat desired, the number of the revolutions of the engine.

The Pusey & Jones Company, of Wilmington, is building two steel stern-wheel steamers for Carthage, United States of Colombia. They will be shipped in pieces and put together at their destination.

Capt. McDougall's great aim in the passenger boat which he proposes to run between Chicago and Mackinaw during progress of the World's Columbian exposition will be to secure a high rate of speed. He claims that the whaleback steamers now in commission would make 15 or 16 miles an hour if their power was as great as some of the big steel boats in the ore trade.

Western waterway interests—Ohio and Mississippi river vessel owners in particular—will hold a convention in Evansville, Ind., Oct. 14 and 15. The aim is to bring together, for the furtherance of legislation in the next Congress, state governors, congressmen, members of state legislatures and representatives of commercial bodies in the states on the Ohio and Mississippi rivers.

New Aids to Navigation.

After several conferences with the government engineers on the lakes, and as a result of a practical knowledge of the needs of lake navigation, gained through years of experience in connection with legislation pertaining to channel improvements, light-houses, etc., Capt. George P. McKay, secretary of the Cleveland Vessel Owners' Association, has prepared a list of lights, fog signals and other aids to navigation for which Congress will be asked to make provision during the coming winter. Capt. McKay also calls attention to some bad spots in different parts of the lakes, for the removal of which it will be necessary to make provision in the river and harbor bill. The different aids to navigation have in most cases been requested of Congress in light-house measures for several years past, and favorable reports regarding them have been made by the engineers. On account of the failure of Congress to provide for these aids, however, the vessel owners have by private subscription paid large sums of money for the maintenance of lights and light-ships in different parts of the lakes, and now another effort will be made to have the government make the improvements. Petitions covering the entire list will be made out shortly and in the meantime Capt. McKay requests that vessel owners or masters communicate with him regarding any important places that may have been overlooked and their suggestions will receive attention. The list of lights and fog signals is as follows:

TENTH LIGHT-HOUSE DISTRICT.

Starve island reef—Skeleton tower light.
Bar point—Light-ship to be anchored in American waters.
Lime-Kilns crossing—Two permanent lights on the west bank of the crossing where float lights are now stationed.
Ballard's reef—Light-ship with fog bell on same.
Grosse Isle—One set of range lights to center the channel from the foot of Fighting island to Mamajuda light.
Mamajuda island—Light on north end to range with present light on Mamajuda and keep vessels off the middle of Fighting island while running the channel between Grassy and Mamajuda islands.

ELEVENTH LIGHT-HOUSE DISTRICT.

Grassy island—Range lights above this island, Detroit river, to clear the head of Fighting island.
Scarecrow island—Light and fog whistle.
Middle island—Light and fog whistle.
Forty-mile point—Light and fog whistle.
Poe's reef—Light-ship and fog whistle.
Graham shoal—Light-ship and bell.
St. Mary's river—Moving upper St. Mary's range lights to the westward of Round island and placing a light-ship at intersection of ranges.
Crisps point, 16 miles west of Whitefish—Light and fog signal.
Grand Marais, Mich.—Light and fog signal.
Big Point Sable—Fog signal.
Big bay point, midway between Granite and Huron islands—Light and fog signal.
Point Abbaye, entrance to Huron bay—Light-ship.
Mendota, Bete Grise bay—Reestablish light and fog bell.
Eagle Harbor—Fog signal.
Eagle River—Discontinue Eagle River light and move west to Sand Hills.
Portage lake ship-canal—Fog signal.
Fourteen-mile point—Light and fog whistle.
Lone Rock, Porcupine mountains—Light and fog signal.
Gull island, Apostle group, north-east of Michigan island—Light and fog signal.
Bark point—Light and fog signal.
Pat point, north shore, entrance to Grand Portage and Waswanonging bay—Light and fog signal.

Rock of Ages—Light and fog signal.

Rock Harbor—Re-establishment of light in structure at this point and establishment of fog signal.

Chequamegon—Moving main light to fog signal; also harbor light and bell, Chequamegon.

NINTH LIGHT-HOUSE DISTRICT.

Round island, Straits of Mackinac—Light and fog bell.
Seul Choix point—Fog signal.
South Fox island—Fog signal.
North Manitou—Light and fog signal, north end of island.
Frankfort—Fog Bell.
Ludington—Fog signal.
St. Joseph—Fog signal.
Manitowoc—Fog signal.
Sturgeon bay—Coast light and fog signal.
Porte des Morts—Range lights and fog signal.
Rock island—Light-ship.
St. Martin's reef—Light-ship and fog whistle.
Little Gull, Green bay passage—Light and fog signal.
Point au Barques—Coast light and fog signal.
Point Peninsula—Change of appropriation of \$60,000, made in act of August 30, 1890, to provide for light-ships at Poverty island shoal, Eleven-Foot shoal, Drisco's shoal and Whale's-Back shoal.

RIVER AND HARBOR ITEMS.

In addition to provisions for the regular harbor improvements in different ports around the lakes and the continuance of the big projects now under way, the vessel owners will ask that two shoals in the American channel at the lower end of Stag island, St. Clair river, be removed, so that vessels can use the American channel instead of giving exclusive preference to the Canadian channel as at present.

Other shoals, for the removal of which appropriations will be sought are: Thirteen-foot shoal, W. $\frac{1}{2}$ N. from Spectacle reef, distant $3\frac{1}{2}$ miles; rocky spot N.E. $\frac{3}{4}$ E. from old Mackinaw, distant $3\frac{3}{4}$ miles; thirteen-foot shoal, three-quarters of a mile east of Cheboygan.

A demand for the immediate deepening of Grosse point channel to 20 or 21 feet will also be made, irrespective of the plan for a 21-foot channel from Lake Superior to Lake Erie, as proposed in the important report recently made by Gen. O. M. Poe. Six or eight big vessels were aground at one time at this point last week, and the officers of the Cleveland Vessel Owners' Association are surprised that the light-house board delays action on the request made several days ago that stakes be placed to mark this channel.

Life saving stations should be established at Sand Hills, about 12 miles west of Eagle river, Lake Superior, at Bark point, Lake Superior, and Point au Barques, Lake Michigan. Congress will also be requested to provide for these stations.

A new story is told in connection with John D. Rockefeller's lately acquired interests in the the Northern Pacific railway, the American Steel Barge Company and other Pacific coast enterprises. Lake Washington, in the state of the same name, is a body of fresh water about 25 miles long, from 8 to 10 miles wide and of sufficient depth to float the largest steamship. Mr. Rockefeller's scheme, in which Gen. Russell A. Alger is said to be associated with him, is to build a belt-line railway around the lakes, connecting with the trunk lines and then construct a ship canal 12 miles long, running from the lake to Puget sound. The future metropolis of the coast north of San Francisco, according to the story, is to be located on this lake.

The engine of the steam yacht Wadena at the Cleveland Ship Building Company's yard were turned over for an hour, Wednesday. They worked smoothly and were turned at the rate of 75 to 80 revolutions. The yacht may be taken out into the lake this week for further adjustment of her engines, but if not taken out this week she will remain at the yard until ready for her voyage. A trial trip of the Ciscoe, the steel tug built for Ranney & Son., was made Wednesday.

Owners of the Whalebacks Will Insure Cargoes.

As an argument in favor of American vessels patronizing home companies, attention is called in the east to the refusal of foreign underwriters to insure the whaleback steamer Wetmore and cargo of machinery, valued at \$300,000, and bound from Wilmington, Del., to Everett, the new town being built on Puget sound by capitalists interested in the American Steel Barge Company. The claim is made that the foreign companies did not refuse to insure the vessel for the reason that she is not safe, but to discourage American invention in shipbuilding. The barge company has so far experienced no trouble on the lakes in getting insurance for either vessel or cargo, but it is probable that the matter of insurance would not stand in the way of advancement with the new type of vessel even in event of a general refusal on the part of underwriters to take these risks. The projectors of the barge enterprise have repeatedly given out their intention of insuring cargoes themselves if the underwriters refuse to do so and the financial backing already shown in connection with the barge company is enough to warrant the belief that such a plan would be carried out.

The voyage of the Wetmore from Wilmington to Everett will be about 13,000 miles and it is expected that it will be made in about 75 days.

Affairs in Admiralty.

TAKE A SUPPLY OF CATS ABOARD.

Some years ago one of the United States judges on the lakes heard a case involving damage to a cargo of grain, caused by rats getting aboard the vessel and gnawing a hole in a weak spot through which water was admitted to the cargo. The court held that rats are not a peril of the sea and the vessel had to stand the loss. A similar decision is now reported from New York. Judge Brown in the district court there a short time ago heard a case in which it was found that on discharge in New York of a cargo of beans from Fiume, Austria, after a voyage of thirty-four days, an extraordinary amount of damage from rats had occurred. The court held that the negligence of the ship to take reasonable and ordinary precautions against such a familiar cause of damage was to be presumed; that, though an exception of liability by reason of "vermin" in the bill of lading included rats, neither that exception nor the exception of damage from negligence, even if valid, excuses the lack of preliminary precautions against rats through a proper previous examination of the ship, through washing out or fumigating, or a sufficient supply of cats; that the ship not having satisfactorily overcome the presumption against her, the libelants were entitled to recover their damage.

On a Sunday afternoon, in the summer of 1889, a fleet of vessels lying at the piers in Lorain harbor, Lake Erie, were torn from their moorings by a sudden and violent storm. In the jam that followed, a bridge close at hand was forced into the river and the little schooner Pelton was sunk. The county officials sought to recover from the vessels for the damage done the bridge but their action was quickly disposed of. The owners of the Pelton brought suit for the sinking of their boat against the propeller Cormorant and schooner Kent and the case is still in the federal court at Cleveland. It would seem that a decision handed down from the district court, southern district of New York, has an important bearing on this Lorain accident. In the New York case the libelant, or the party bringing action, produced testimony showing that his boat, the John Kelley, was tied to a pier 25 feet from a tier of barges that had broken adrift, one of them, the Nora Costello, running into the Kelley and damaging her. The libel admitted that the accident was due to a sudden gust of wind but charged that the Costello had not been properly made fast to the pier. The evidence showed that she was fastened in the customary manner. The court held that vessels, in making fast to piers, are bound to provide only against ordinary contingencies, such as they can anticipate; that they are not bound to make fast by lines so strong or numerous as to resist the impact of a fleet of vessels getting adrift; and that as there was no negligence in the Costello as to her mode of fastening, the libel against her should be dismissed.

A barge belonging to the Pennsylvania Railroad Company and laden with cotton took fire in New York harbor a short time ago while lying at a pier. It was 1 o'clock in the morning when the fire broke out but the tug Adelaide, lying near at hand, had

steam up and immediately made fast to the barge, towing her into the stream and at the same time pumping water on the fire. Shortly after being towed into the stream, the barge was surrounded by tugs belonging to the owner of the barge, and as able as the Adelaide to do all that might thereafter be required. The tug Talisman, belonging to other owners, arrived an hour after the fire had broken out, and the tug Havemeyer came some time later, but the latter was told that her services were not required, notwithstanding which she put on a stream of water. The barge was finally sunk to extinguish the fire. The value of the property saved was \$21,587.50. The value of the tug Adelaide was \$15,000. The time of her service was rather more than twenty-four hours. The risk to her was small. Judge Benedict of the federal court, eastern New York district, held that the Adelaide should recover \$2,000 as salvage, the Talisman \$500 and the Havemeyer nothing at all.

In a case before Judge Shipman of the United States district court, Connecticut, a short time ago, it was shown that a tug was injured in a collision with a steamer owing to the steamer's fault, but the court held that the wages and provisions of the crew of the tug during the expected time she was undergoing repairs, a period of twenty-one days, should not be allowed as damages against the steamer.

Serve's Ribbed Boiler Tubes.

The Southern Pacific Railway Company and the Grand Trunk Railway Company, Canada, have ordered experimental lots of these tubes. They are also in use on several fleets of steamers in this country. An experimental test may be arranged for at some lake shipyard soon. The government inspectors make a distinction in favor of this style of tube.

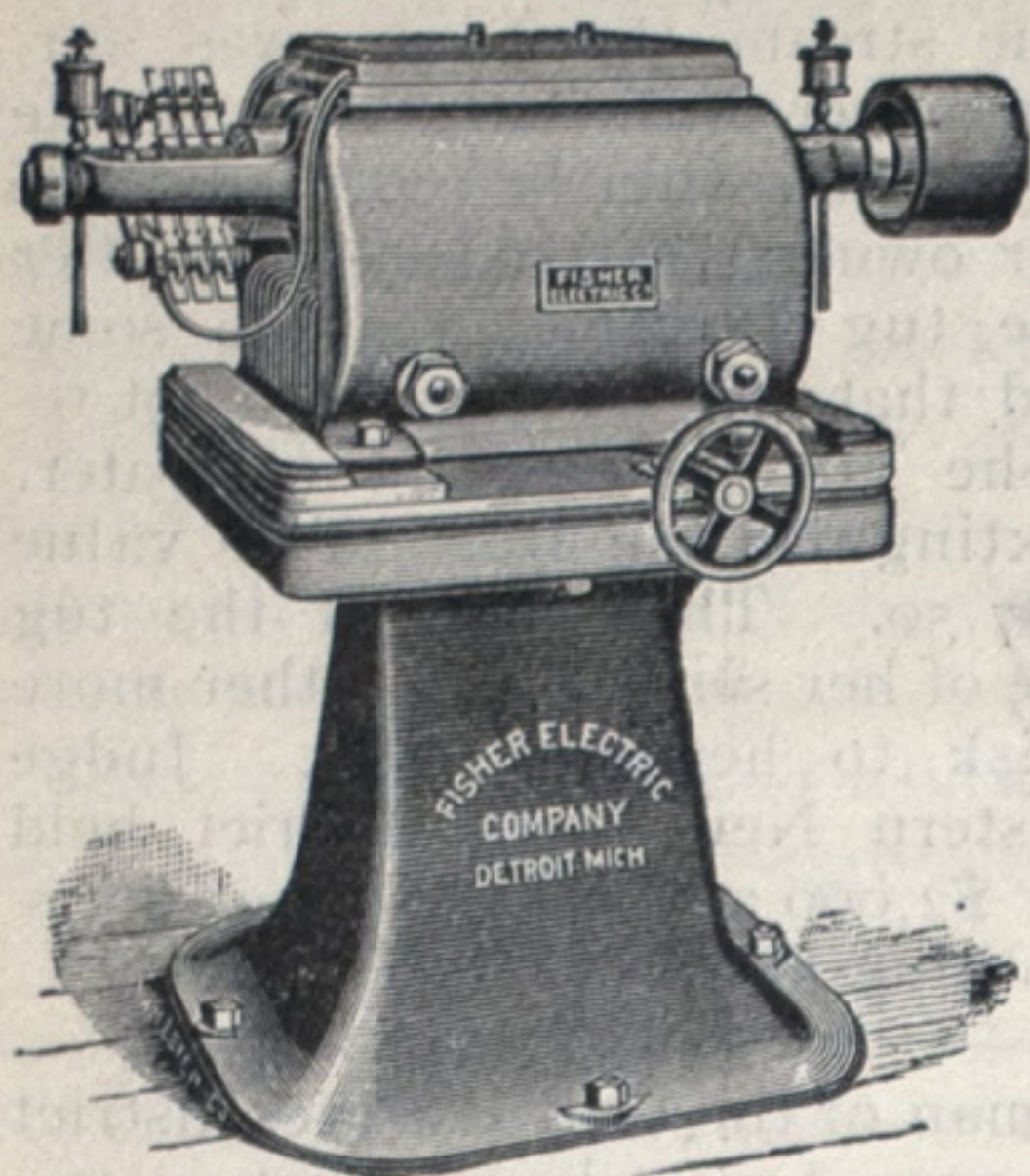
The Whitmore & Maxon steam steering gear has recently been applied to four tugs, the latest order being from the Escanaba Towing and Wrecking Company for their tug Monarch. Although the gear is giving satisfaction, the owners are refusing to fill further orders until they have perfected a new valve. The opinion of West Bay City builders is that there is nothing equal to this gear, the three advantages being simplicity, durability and cheapness. The same company has patented a chain cable conveyor for handling bulk material of all kinds. The main feature of the patent is the sprocket wheel. This wheel can be applied to steering apparatus with the result of greatly reducing the wear on the chain. An order was recently received for two of the wheels for use in a small side wheel steamer. Ask Whitmore & Maxon, Bay City, for full information.

The Almy water tube boiler for marine work is in some of the fastest steam yachts on the Atlantic coast, in various passenger steamers and has been placed in U. S. torpedo boat Stiletto, with excellent results. Boilers of this type for stationary work have given equally satisfactory results and are being used for power in factories, coal elevators, draw bridges, for heating public institutions and in large manufacturing establishments as emergency boilers for fire pumps. Steam can be raised in them in equal time with first class steam fire engines. They are a great success and experts have pronounced them the best sectional water tube boiler on the market. The Almy company has done during the past year a very satisfactory amount of business and has had no complaints, as the boiler in every case has yielded results equal to and often beyond what has been claimed for it.

UNITED STATES ENGINEER OFFICE, 34 West Congress street, Detroit, Mich., September 19, 1891. Sealed proposals, in triplicate, will be received at this office until 2 o'clock p.m., October 19, 1891, and then opened: For furnishing ten gate anchorages for the 800 feet lock at St. Mary's Falls Canal, Michigan. Preference will be given to materials of domestic production or manufacture, conditions of quality and price (import duties included) being equal. Attention is invited to Acts of Congress, approved February 26, 1885, and February 23, 1887, vol. 23, page 332, and vol. 24, page 414, Statutes at Large. The government reserves the right to reject any or all proposals; also, to waive any informalities. For further information apply at this office. O. M. POE, Colonel, Corps of Engineers, Bvt. Brig. General, U. S. A.

LAST OF THE SEASON.—September 19th, the last Niagara Falls excursion of the season will be run over the Nickle Plate, Saturday night trip, going, arriving at the Falls early the next morning. Same low excursion rate and ample accommodation in our Pullman palace day coaches and sleeping cars. Ask nearest Nickle Plate agent.

SEE CAPT. PECK'S LETTER Regarding Incandescent Lighting Plant on the Steamer S. R. KIRBY.



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Detroit, Mich.,

DETROIT, MICH., Oct. 7, 1890.

GENTLEMEN:—Replying to your inquiry regarding the operation of the 200 Light Incandescent Plant placed on the Steamer S. R. Kirby, we wish to say that the plant has operated during the season without an interruption and has not cost us one cent. No Lamps have been broken, and we would not be without it. Very truly yours,

E. M. PECK, President.

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Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind, or wishing to purchase vessels, are invited to take advantage of the same offer. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed **MARINE REVIEW, 510 Perry-Payne Building, Cleveland, O.**

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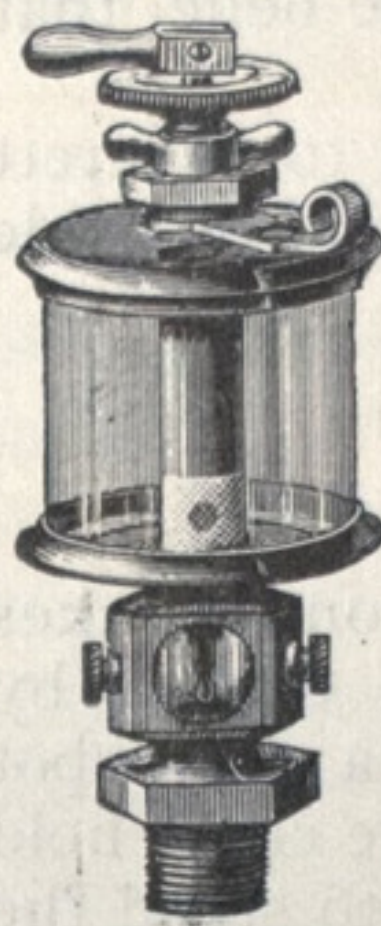
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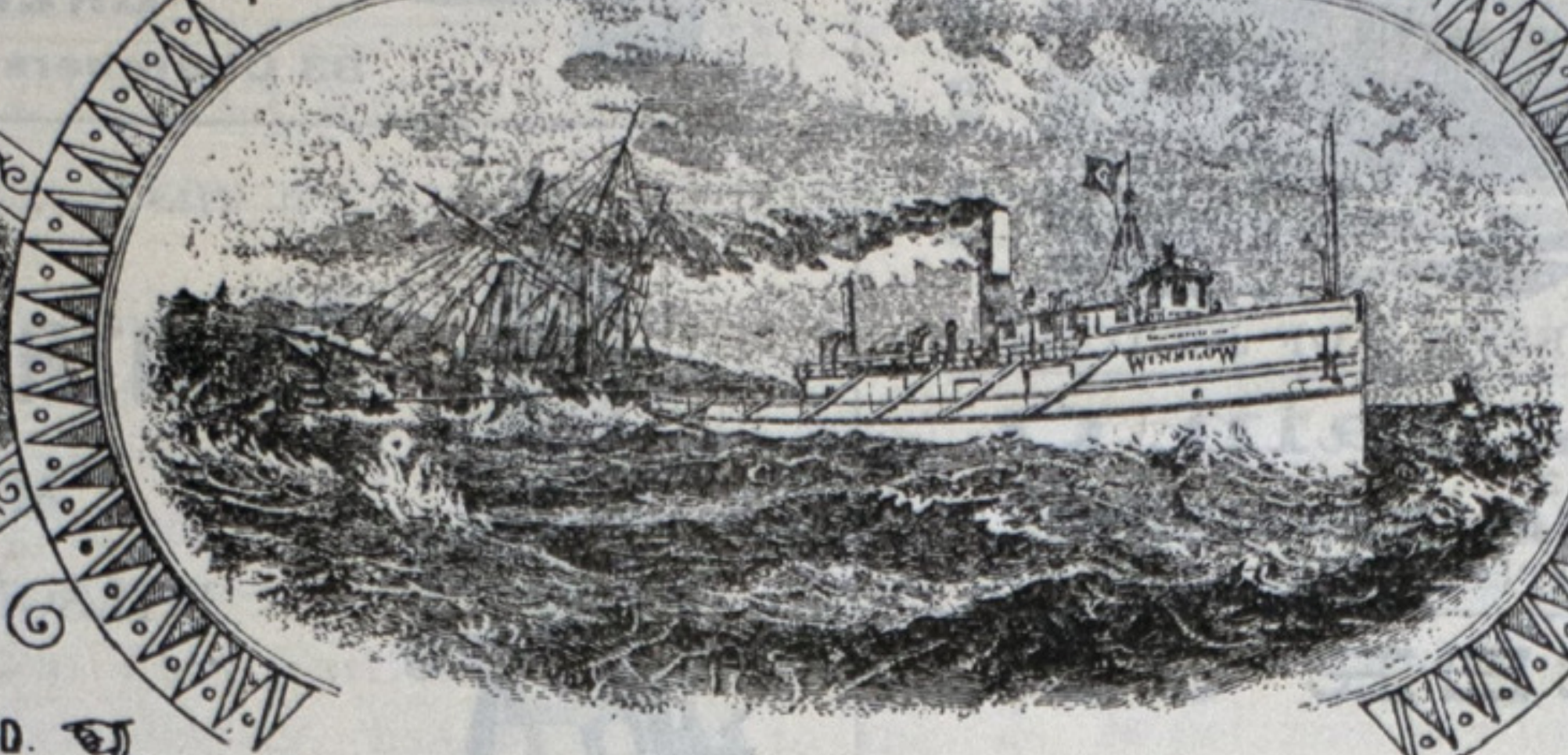
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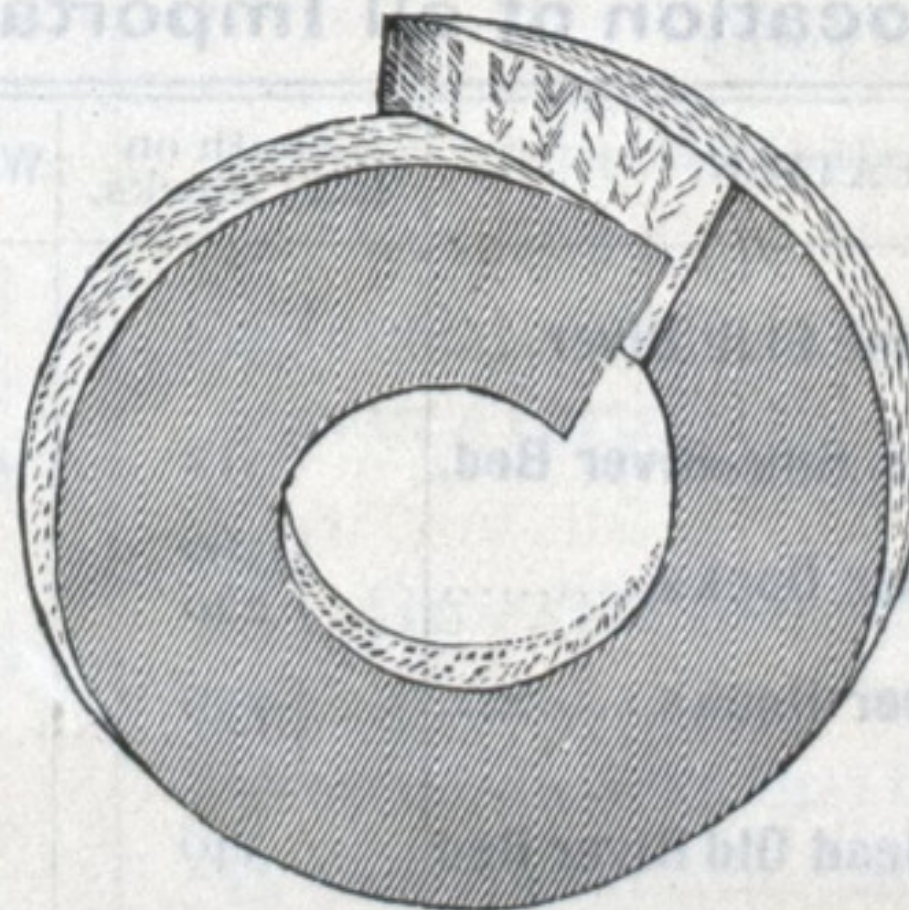
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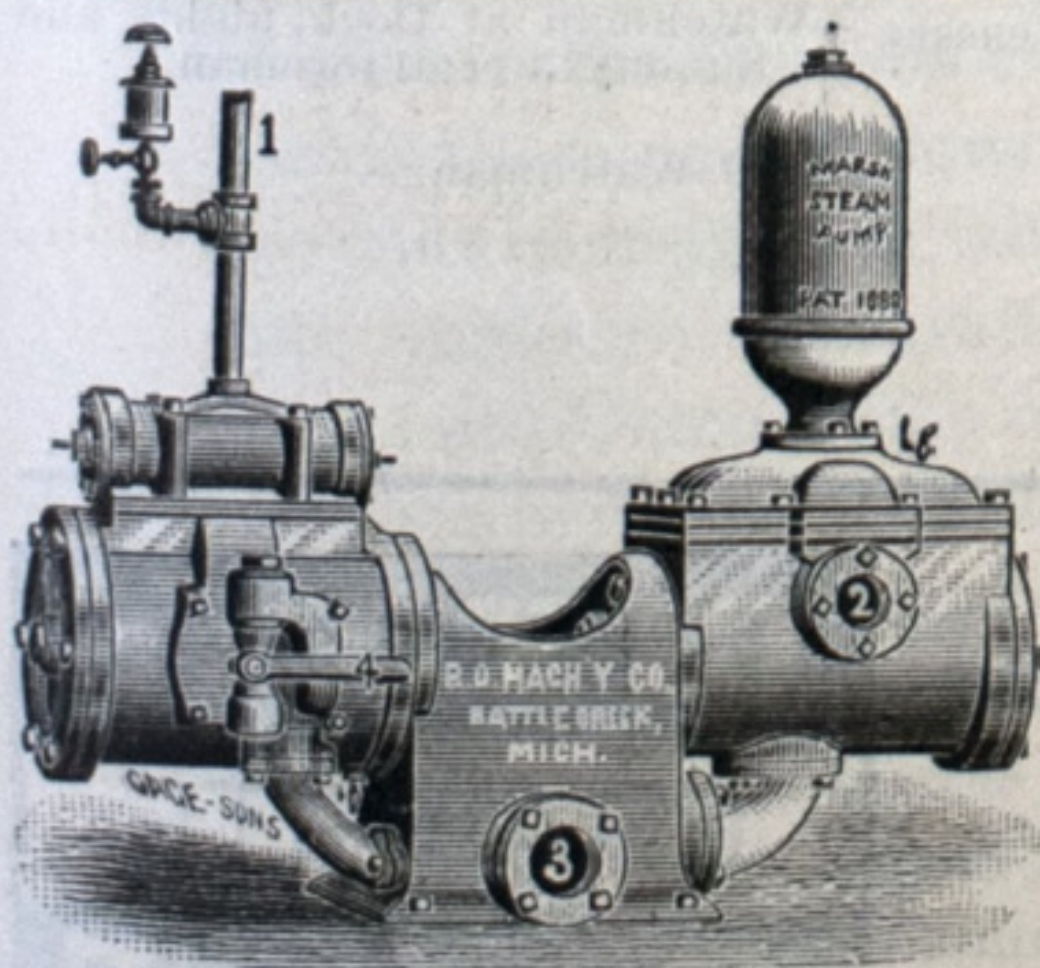
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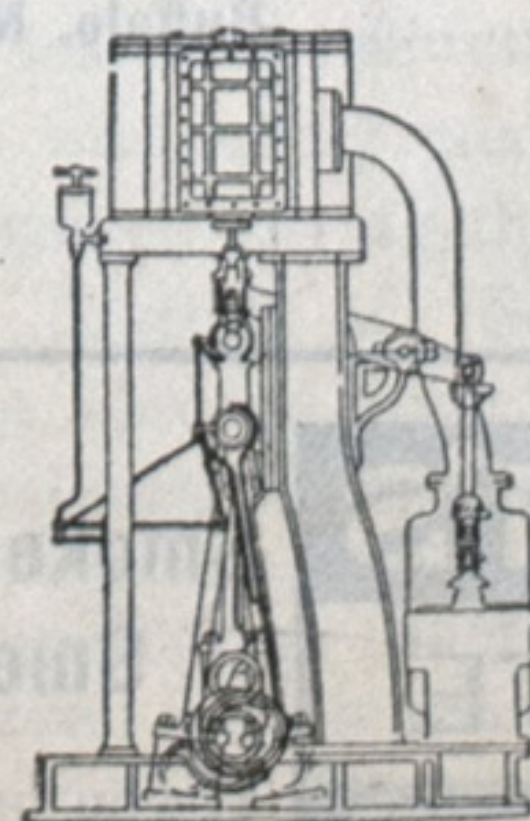
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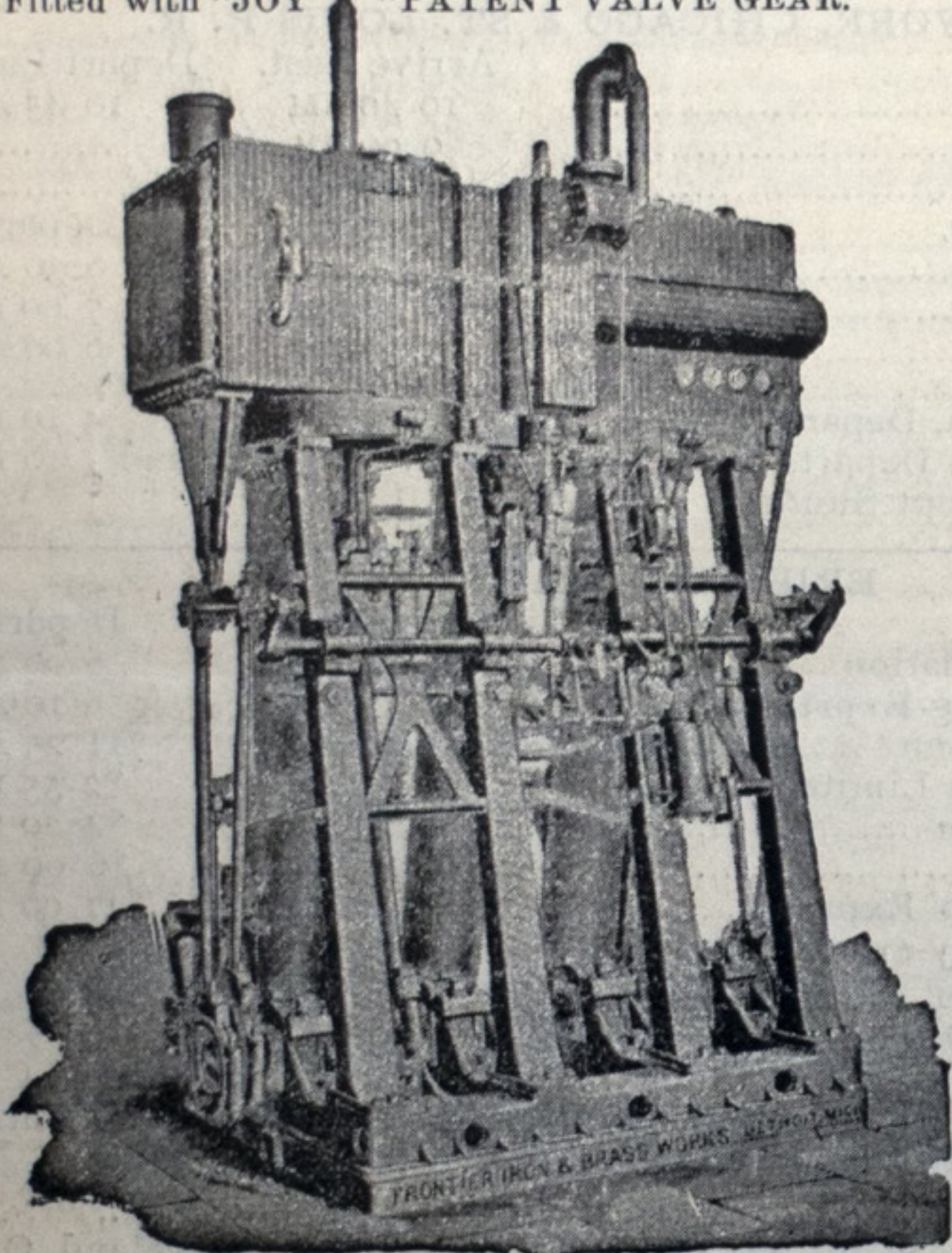
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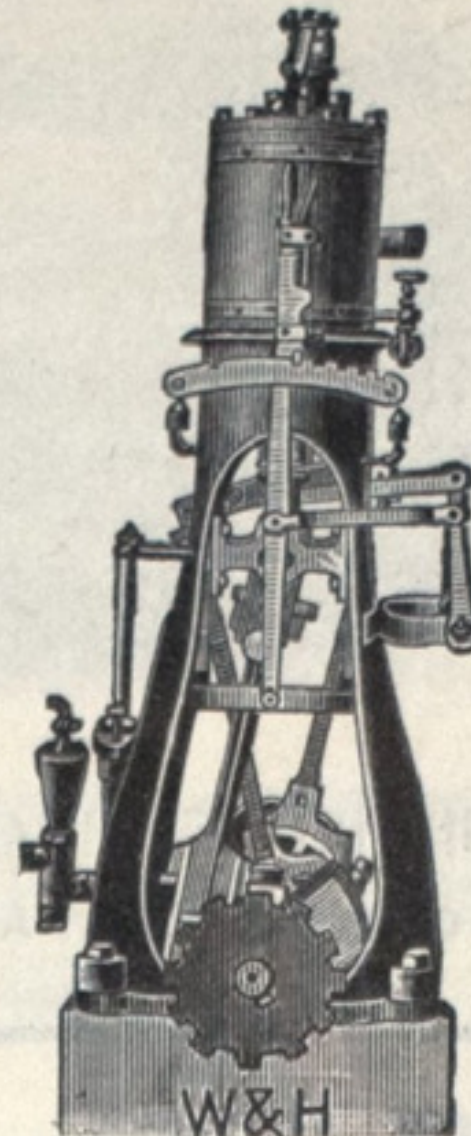
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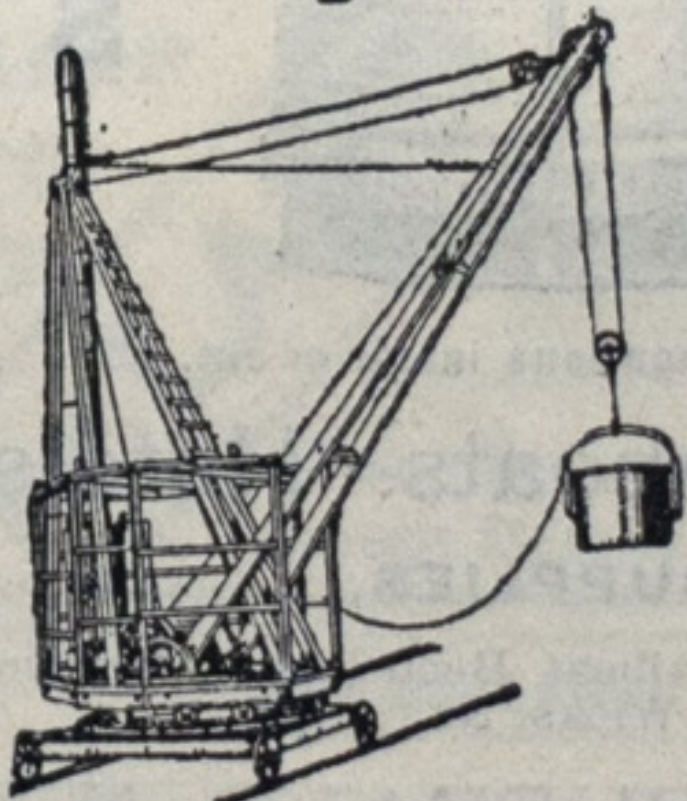
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